

DRAFT

**FUELS REPORT ON THE NEED AND APPROPRIATE DEGREE
OF REGULATION OF PARTICULATE MATTER
FROM DIESEL EXHAUST**

OUTLINE

**FUELS SUBCOMMITTEE MEETING
FEBRUARY 18, 2000**

I. INTRODUCTION

A. Purpose

B. Review of Diesel Fuel Properties and Specifications

C. Review of Adopted and Proposed Regulations

1. ARB Regulations

2. EPA Regulations

3. Other Regulations

D. Fuel Options

1. Reformulated and Synthetic Diesel Fuels

2. Alternative Diesel Fuels

3. Diesel Fuel Additives

4. Gaseous Fuels

E. Applicability Options

1. On-road Engines

2. Off-road Engines

3. Portable Engines

4. Stationary Engines

II. FUEL COMPOSITION AND PROPERTY EFFECTS

A. Sulfur Content

1. Engine Effects

2. Control Equipment Effects

- B. Aromatic Hydrocarbon Content
- C. Polynuclear Aromatic Hydrocarbon Content
- D. Specific Gravity
- E. Distillation Temperatures
- F. Cetane Number

III. REFORMULATED AND SYNTHETIC DIESEL FUELS

A. Ultra-low-sulfur CARB Diesel

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

B. ARCO'S Emission Control—Diesel (EC-D)

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

C. Low-aromatic Synthetic Diesel Fuel

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

D. Other Reformulation Options

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

IV. ALTERNATIVE DIESEL FUELS

A. Water-diesel Emulsions

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

B. Ethanol-diesel Micro-emulsions

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

C. Bio-diesel and Blends

1. Production, Supply, and Cost
2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

D. Water-naphtha Emulsions

1. Production, Supply, and Cost

2. Composition, Properties, and Performance
3. Particulate Matter Emissions and Risk Reduction
4. Other Emissions
5. Other Environmental Impacts

V. DIESEL FUEL ADDITIVES

VI. GASEOUS FUELS

A. Compressed Natural Gas (CNG)

B. Liquefied Natural Gas (LNG)

C. Liquefied Petroleum Gas (LPG)

VII. SUMMARY

A. Discussion

B. Summary Tables

VIII. RECOMMENDATIONS

IX. APPENDICES